

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of

Internet Telephone

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Rulemaking No. 8775

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SUPPLEMENT

America's Carriers Telecommunication Association ("ACTA"), by its attorneys, herewith submits the following supplement to its filings of March 4, 1996¹, June 10, 1996² and August 16, 1996³ (collectively, the "filings") in the above-captioned matter.

Since the filing of its August 16 Supplement, it has come to ACTA's attention that additional Bell Operating Companies ("BOCs") have made available to the Commission studies of the effects of Internet usage on their costs and infrastructure. Accordingly, ACTA is submitting this additional filing so that this important information is included in the record of this proceeding. The information contained in this supplement reaffirms the assertions made in ACTA's earlier filings. Accordingly,

¹ Petition for Declaratory Ruling, Special Relief, and Institution of Rulemaking ("Petition").

² Reply Comments of America's Carriers Telecommunication Association ("Reply").

³ Supplement.

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ACTA respectfully requests that the information contained in Exhibit 1 herein be included in the record of the above-captioned proceeding.

Respectfully submitted,

**AMERICA'S CARRIERS
TELECOMMUNICATION ASSOCIATION**

By: Robert M. McDowell
Robert M. McDowell
Deputy General Counsel

Of Counsel:

Brian A. Cute
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Dated: August 30, 1996

mcb/070/internet.sup

EXHIBIT 1

U S WEST, Inc.
Suite 700
1020 Nineteenth Street, NW
Washington, DC 20036
202 429-3133



Glenn Brown
Executive Director-
Public Policy

June 28, 1996

James Schlichting, Chief
Common Carrier Bureau
1919 M Street N.W., Suite 544
Washington, D.C. 20554

Dear Mr. Schlichting:

Attached for your information and use is a study undertaken by U S West to analyze network usage patterns of Enhanced Service Providers (ESPs).

Please call me if you would like to discuss this further.

Sincerely,

A handwritten signature in cursive script that reads "Glenn Brown". The signature is written in dark ink and is positioned to the left of the word "Attachments".

Attachments

U S WEST Communications ESP Network Study

Network Usage Studies

With the explosion in the use of the Internet, U S WEST became concerned about how the Internet Service Providers were using the local telephone network. We believed that their usage characteristics were different from other users of the local network. In order to validate our concerns with data, we have undertaken network usage studies on a sample of Enhanced Service Providers (ESPs).

Initially, U S WEST identified approximately 80,000 ESP lines within our 14 state territory as of March 1996. Based on estimates of total national market shares for various types of ESPs, we believe the total ESP lines in U S WEST are closer to 120,000. U S WEST then selected a robust sample of ESPs for the study in four states: Colorado, South Dakota, Utah, and Washington. The sample included 64 hunt groups, with approximately 6,000 lines. The sampled lines represent approximately 5% of our total estimated ESP lines in service. The sample was subdivided into Internet Service Providers, Value Added Networks, On Line Providers, and Bulletin Board Services. Each line was (or will be) studied 24 hours a day, 7 days a week, for a minimum 4 week period. The studies began in February 1996 and will conclude in July 1996.

Preliminary Results

The preliminary results of our network usage studies are now available. These results include data for 81% of the lines for a 2 week period. No results are yet available for the remaining 19%. The results clearly demonstrate that ESPs use the local network in a manner that is significantly different than other users (represented by total central office statistics). Attachment 1 displays comparisons of the average minutes per line and average terminating attempts per line for each type of ESP and the central office. These are displayed for both the central office busy hour and the hunt group busy hour. As the charts in Attachment 1 demonstrate, the ESPs use their lines up to six times more than other users during the office busy hour, and up to nine times more than other users during their hunt group busy hour. This busy hour average, however, can mask the very concentrated usage observed with individual ESPs. This is demonstrated in Attachment 2 which shows selected ESP usage over a 24 hour period. The average holding times for the studied ESP types as well as other residence and business users are displayed in Attachment 3.

Network Costs

These studies demonstrate that ESPs do have usage patterns that are significantly different than other local users. The ESPs' highly concentrated use of their lines does have an impact that adversely affects our local network. Attachment 4 provides a description of the real network problems which resulted in a central office. In order to avoid the blockage experienced by these customers, U S WEST is forced to redesign the network to account for the usage patterns of ESPs, and thus incur additional costs. These costs of serving ESPs include:

- additional line units in the switch serving the ESP
- expense associated with load balancing the switch serving the ESP
- usage costs (not recovered in flat rate local service)
- increased interoffice trunking
- potential expansion of capacity at the switch serving the ESP's end user
- excess construction costs for many of the local ESP lines.

U S WEST Communications ESP Network Study

Attachment 5 outlines more specifically one component of the increased costs of serving the ESPs. The network is normally engineered for a POTS line at 3.32 CCS (or 5.64 minutes) per line. This allows one line unit within a switch module to serve approximately 500 POTS lines. When the heavy usage of an ESP line is not identified and accounted for in the design, blockage occurs. To serve the same 500 POTS lines for an ESP, almost six times the number of line units are required based on an estimated average of 19.1 CCS (or 32.47 minutes) per ESP line. Based on our estimate of approximately 120,000 ESP lines, U S WEST would be forced to engineer the switch line units to serve an equivalent of 720,000 non-ESP POTS lines. This is a significant impact, and given the projected expansion of Internet usage, it must be addressed by FCC policy.

IXC Data

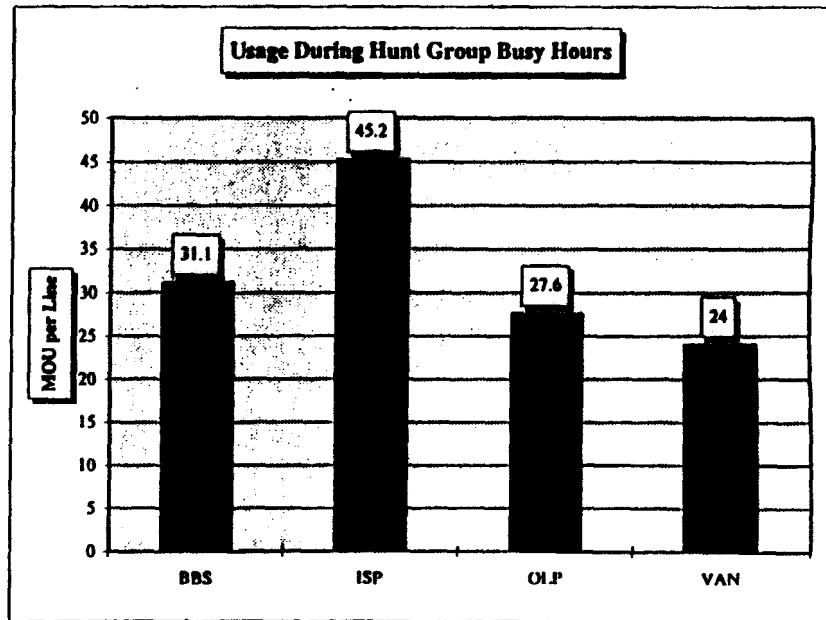
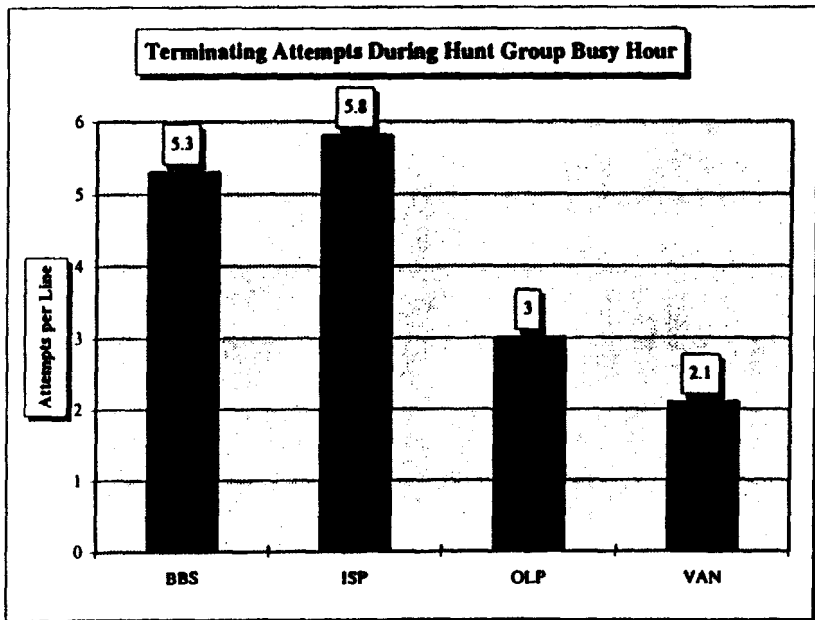
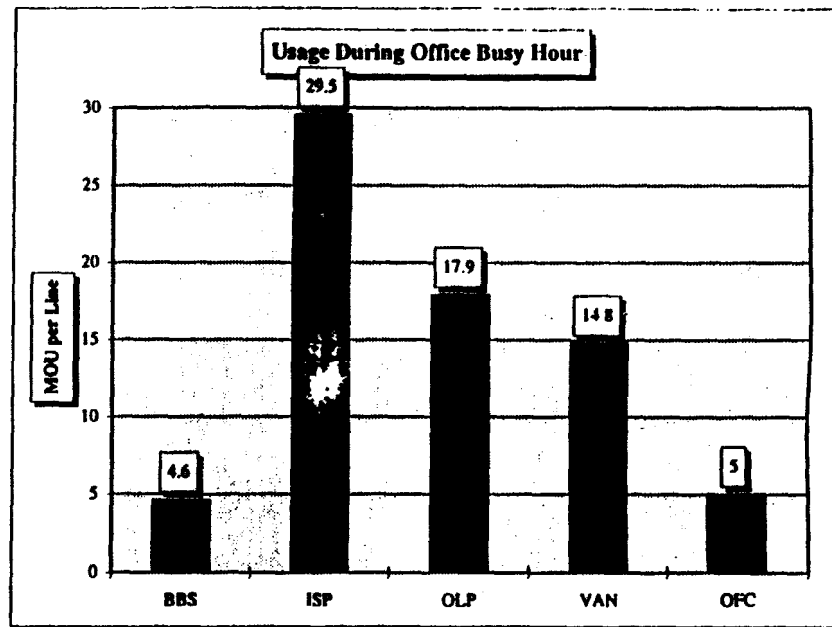
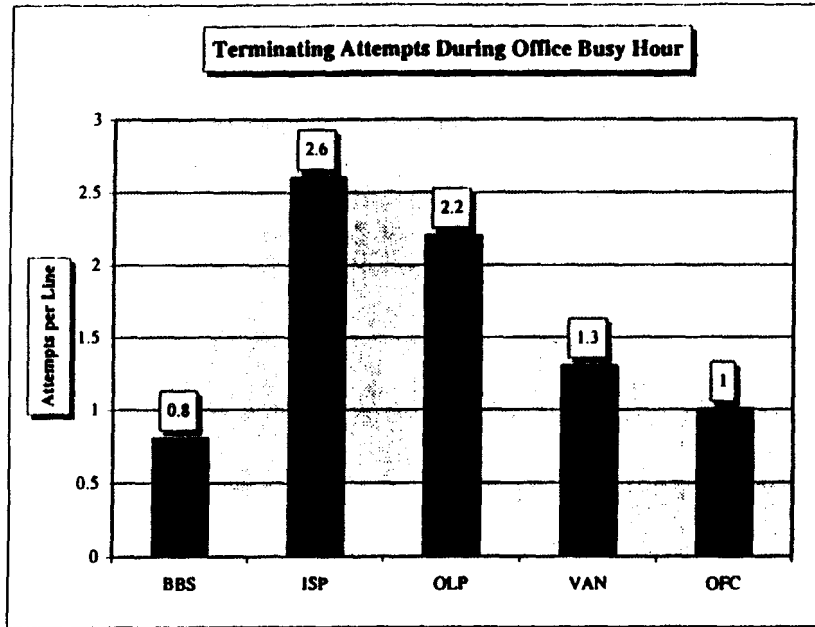
For comparative purposes, we also collected data on Interexchange Carrier (IXCs) tandem trunks. The results of these studies can be found in Attachments 6 - 10. Although the trunking networks ordered by the IXCs differ from the local services purchased by the ESPs, the studies demonstrate that ESP usage is similar to IXCs.

Conclusion

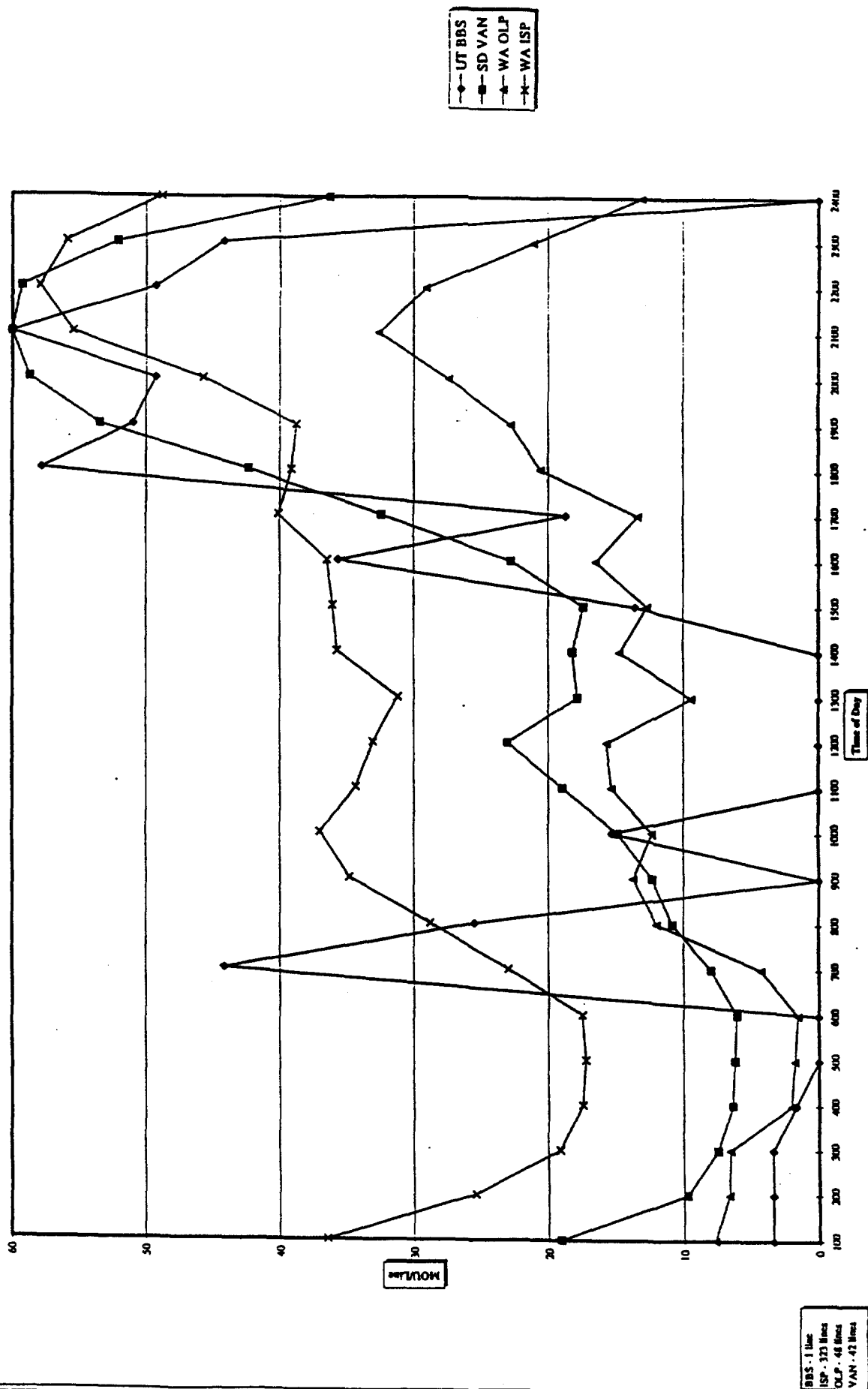
U S WEST's studies have validated our concerns that the usage patterns of the ESPs differ from other end users on the Public Switched Network. The explosive use of the Internet has impacted our local network and will continue to require additional investment to prevent serious blockage.

U S WEST believes that it is time for the FCC to address the implicit subsidy and inconsistency in the application of access charges inherent in the "temporary" ESP Exemption. We believe that the FCC should address this in its Access Reform proceeding. It is also U S WEST's belief that usage sensitive charges for ESPs need to be established in order to send rationale pricing signals for their use of the Public Switched Network.

Attachment #1
ESP Network Study

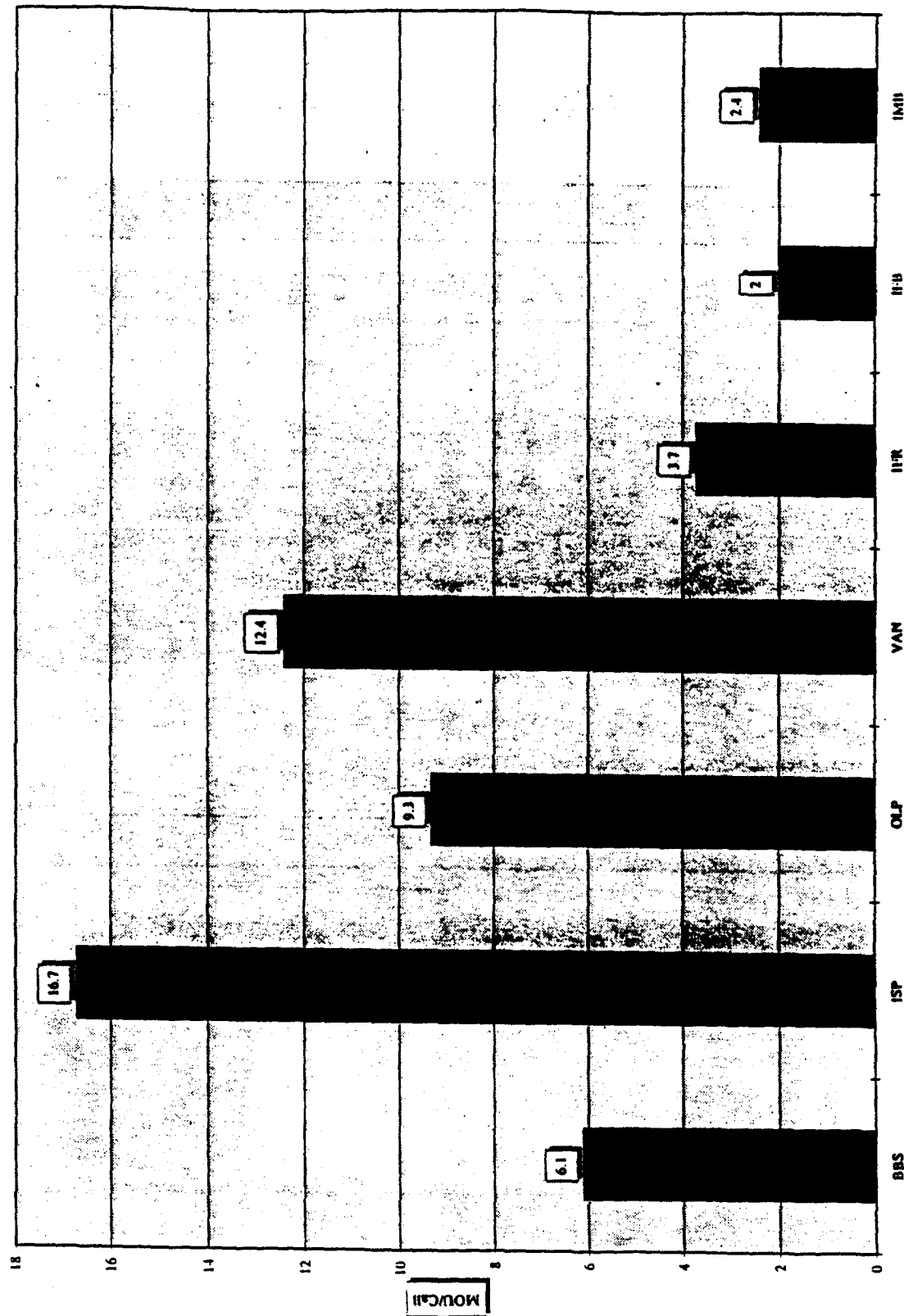


Usage Pattern of Four ISPs - 3-27-96
(MOU per Line)



Attachment #3
ESP Network Study

Average Holding Time



Attachment 4

Line Unit Blockage STTLWACADC0

On May 13, 1996 several customer reports were received in the Service Assurance center that indicated 'no dial tone' and 'slow dial tone' in the Campus central office. This occurred during the evening hours. Analysis of office performance proved no apparent equipment trouble. A request for traffic data was made. The resultant data indicated overflow in Switch Module 29, Line Unit 1. Significant call blocking occurred between the hours of 1900 and 2300. It was decided that traffic performance in this switch would be monitored, with attention to SM 29, LU 1, over the next several days.

Data on May 14 and May 15 indicated continued call blocking in SM 29, LU 1. A significant presence in this LU of an Internet Service Provider was discovered. This ISP had, at the time of this analysis, a total of 384 lines in the office. Eighty eight of those lines appeared in SM 29, LU 1. It was determined that 'line cuts' (load balancing) that would more evenly distribute the traffic load over all the LUs in the office were appropriate. Coordination of this effort was begun and 30 lines were moved from SM 29, LU 1, to other SMs and LUs in the office. At this time, the average number of blocked call attempts in SM 29, per half-hour, was 310. (While other SM/LU combinations experienced some call blocking, none approached this level.) The CCS consumption average during this time frame, per half-hour, was 1105. The maximum capacity is approximately 825 CCS.

Traffic data since the line cuts on May 15 showed a fluctuation in call blocking in SM 29, LU 1. (May 16 had an average of 277 blocked calls; May 20 had an average of 209; May 21 had an average of 418; May 22 had an average of 190.) On May 23, 30 additional lines were moved from SM 29, LU 1, to other SM/LU combinations. Traffic data for May 24 and May 25 showed an average of less than one blocked call attempt --per half-hour-- with 17 incidents over both days. May 26 and May 27, combined, showed an average of 123 blocked call attempts. Data from May 29 showed an average of 160 blocked calls. Again, the majority of these attempts occurred between the hours of 1900 and 2300. The CCS consumption average for these dates, per half-hour and during the evening hours, was still approximately 1100 CCS.

On May 30, 30 additional lines were cut from SM 29, LU 1, to other SM/LUs. Data for May 30 showed an average of 167 blocked calls with the majority of occurrences between 1900 and 2300. Data from June 3 showed an average of 257 blocked calls; June 4 showed an average of 179; June 5 showed an average of 207. From May 30 to June 4 the CCS consumption average, per half-hour, moved from approximately 900 CCS to approximately 650 CCS. Again, the maximum capacity is approximately 825 per half-hour.

On June 6, 30 additional lines were moved out of SM 29, LU 1. This activity now totaled 120 'line cuts.' Data that summarized traffic performance from June 11 through June 16 showed no blocked call attempts. Data from June 17, 18, and 19 showed an average of less than one blocked call attempt in this LU. The CCS consumption average from June 11 was well below the maximum level.

Attachment 5

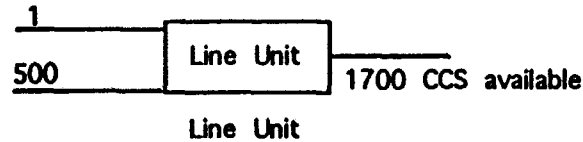
Example of Switch Needs for Non-ESP lines Compared to ESP lines

Control Variables:

Access method is straight copper

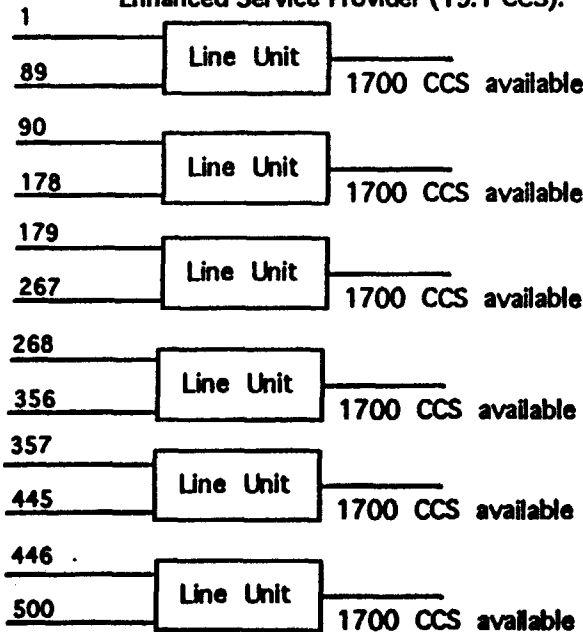
Line Concentration Ratio of 8:1

Scenario One: 500 POTS lines requested for a typical customer (3.32 CCS).



NOTE: this is a 97.7% filled line unit (512 lines are possible).

Scenario Two: 500 POTS lines requested for an Enhanced Service Provider (19.1 CCS).

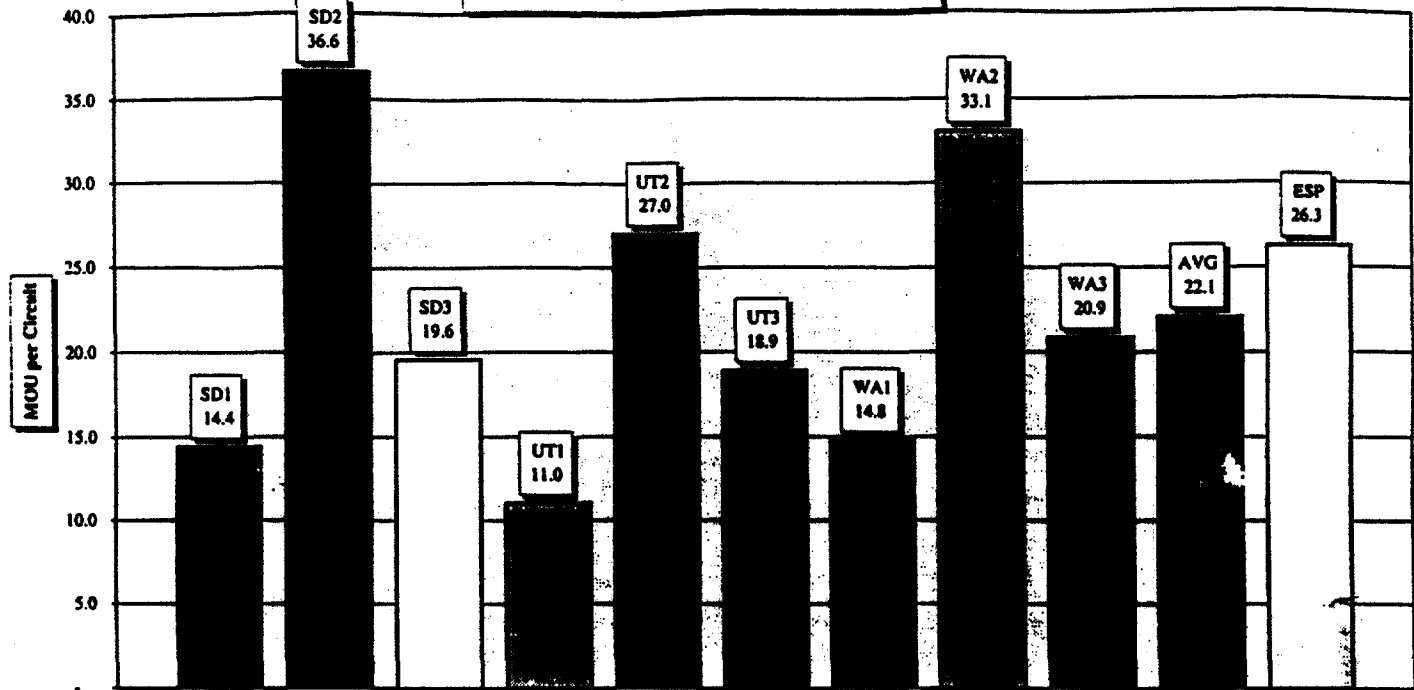


NOTE: the last Line Unit can still terminate 200 lines @ 3.32 or 35 lines @19.1.

6/28/96

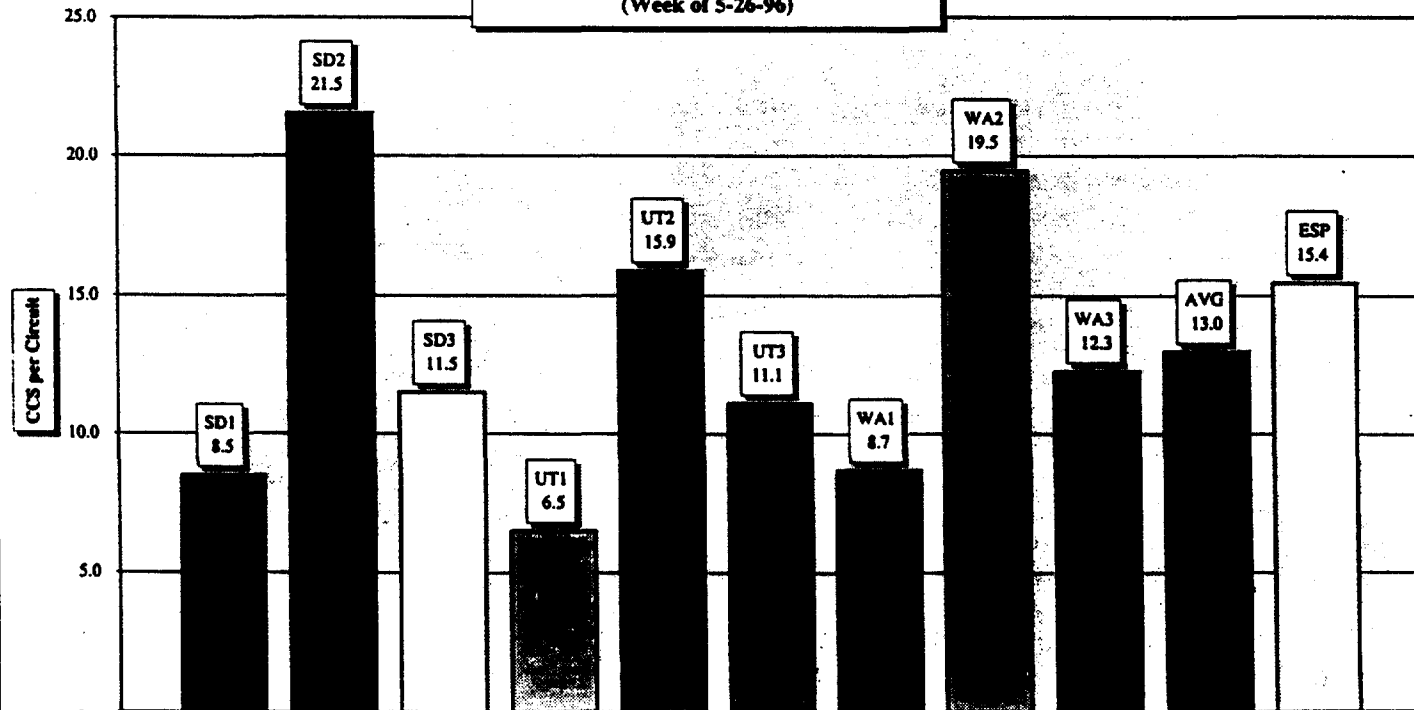
Attachment #6
ESP Network Study

Average Usage During EXC Busy Hours (MOU)
(Week of 5-26-96)



4,704 EXC Circuits

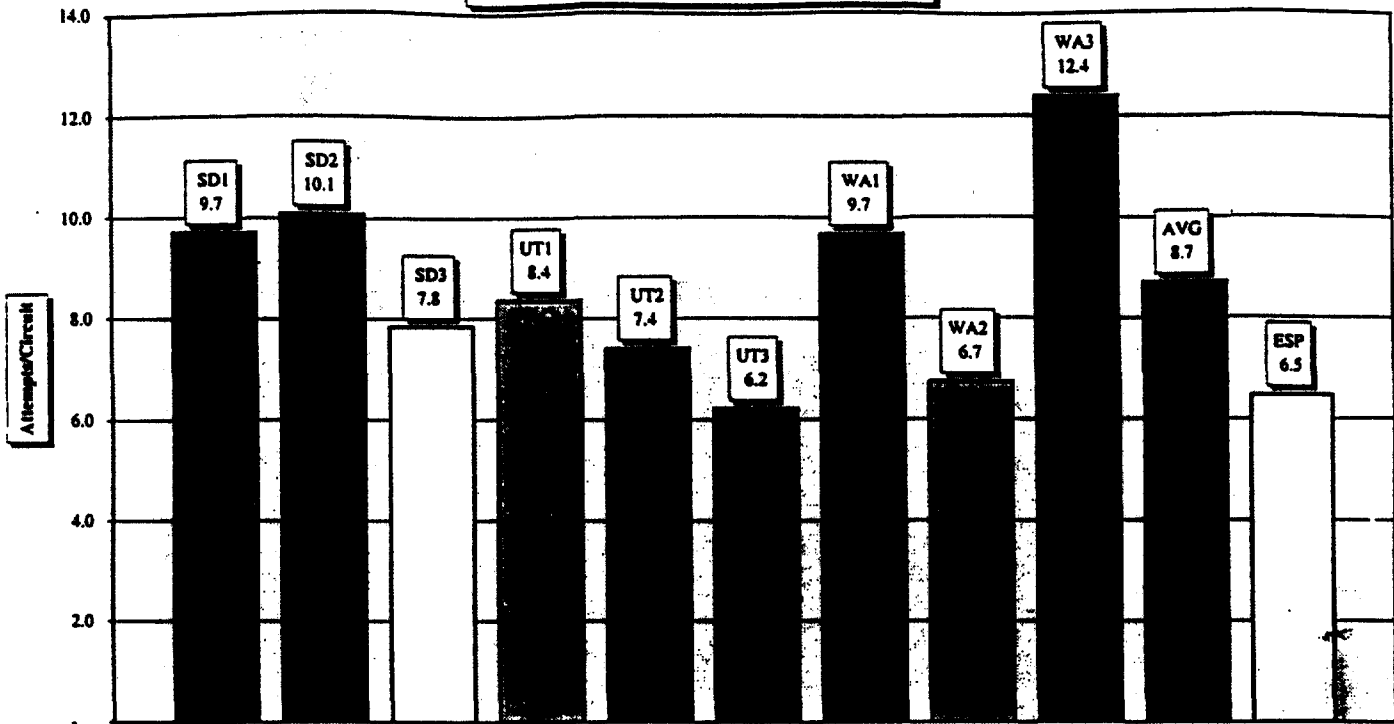
Average Usage During EXC Busy Hours (CCS)
(Week of 5-26-96)



4,704 EXC Circuits

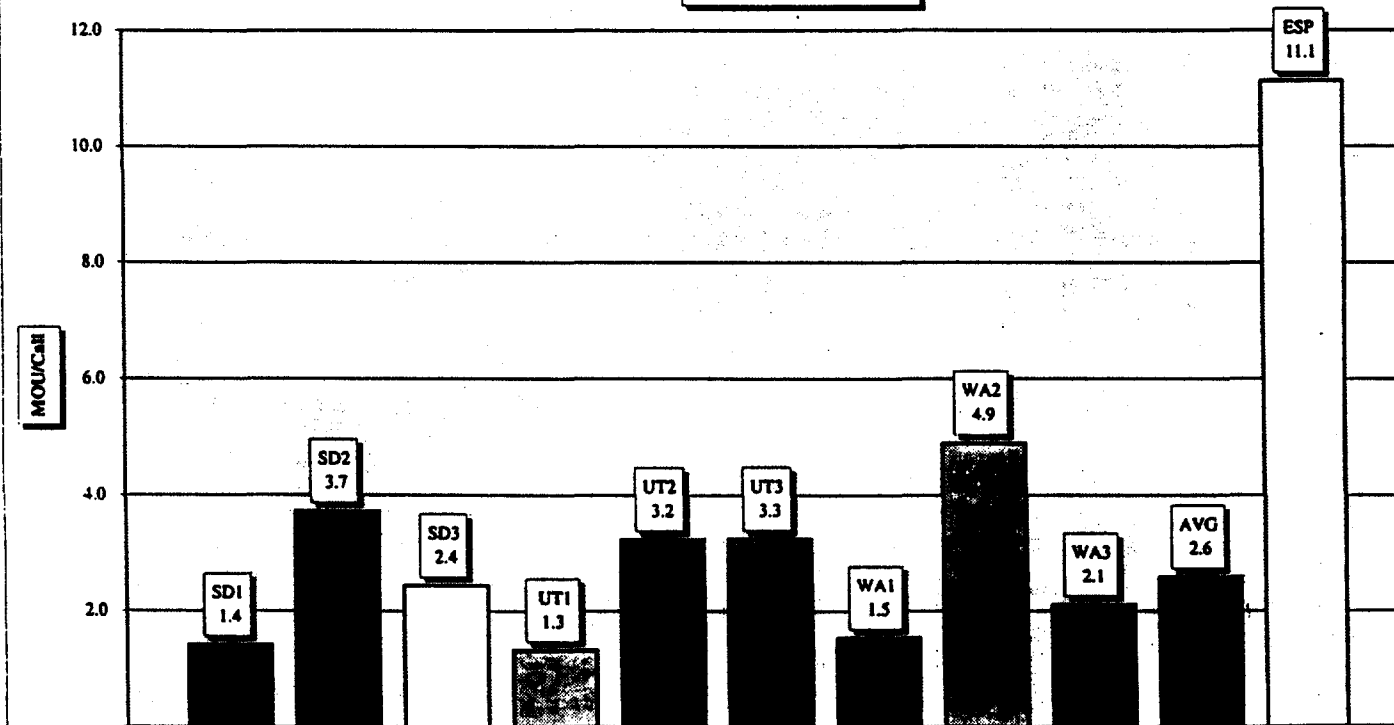
Attachment #7
ESP Network Study

Terminating Attempts During IXC Busy Hour



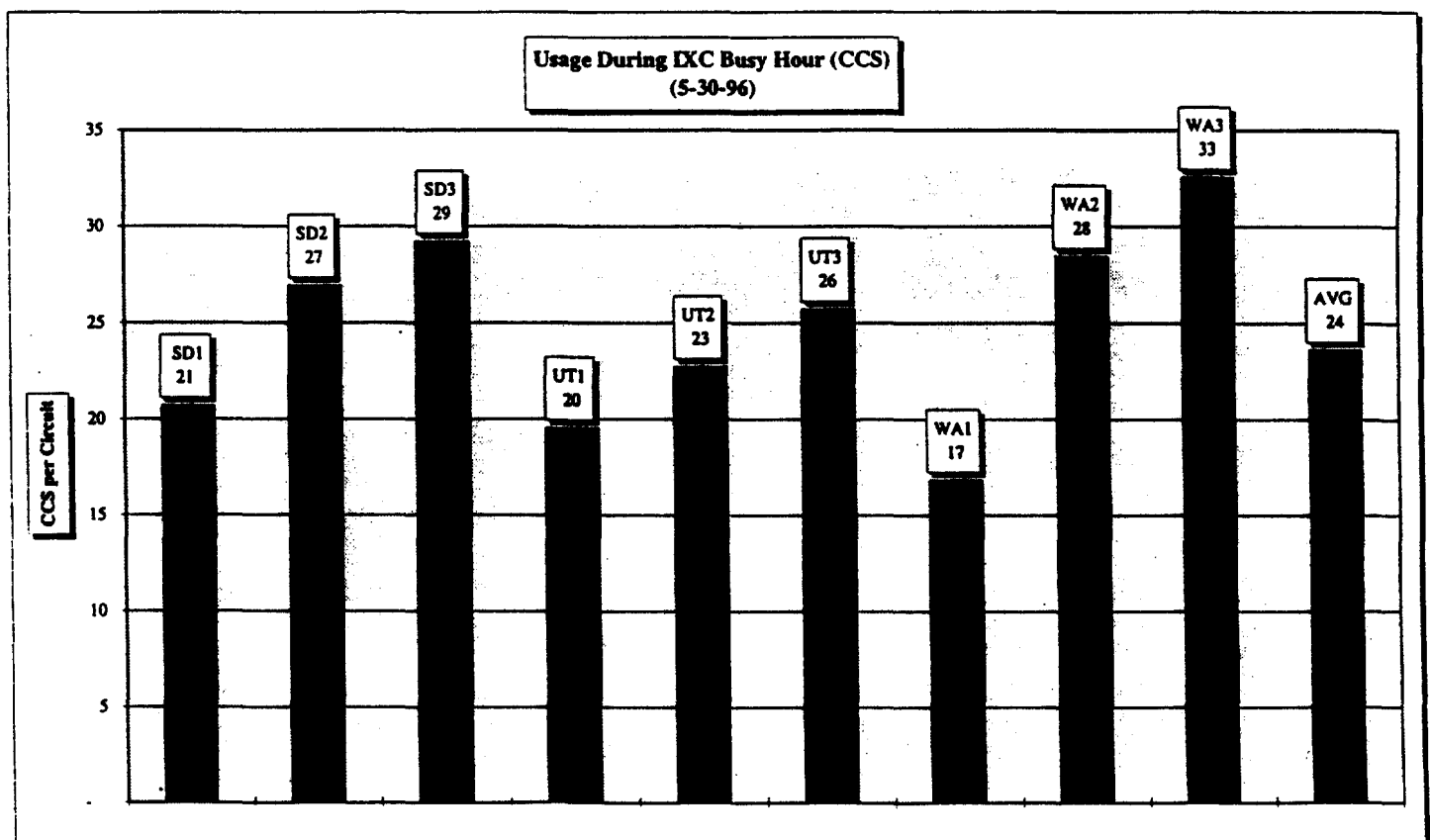
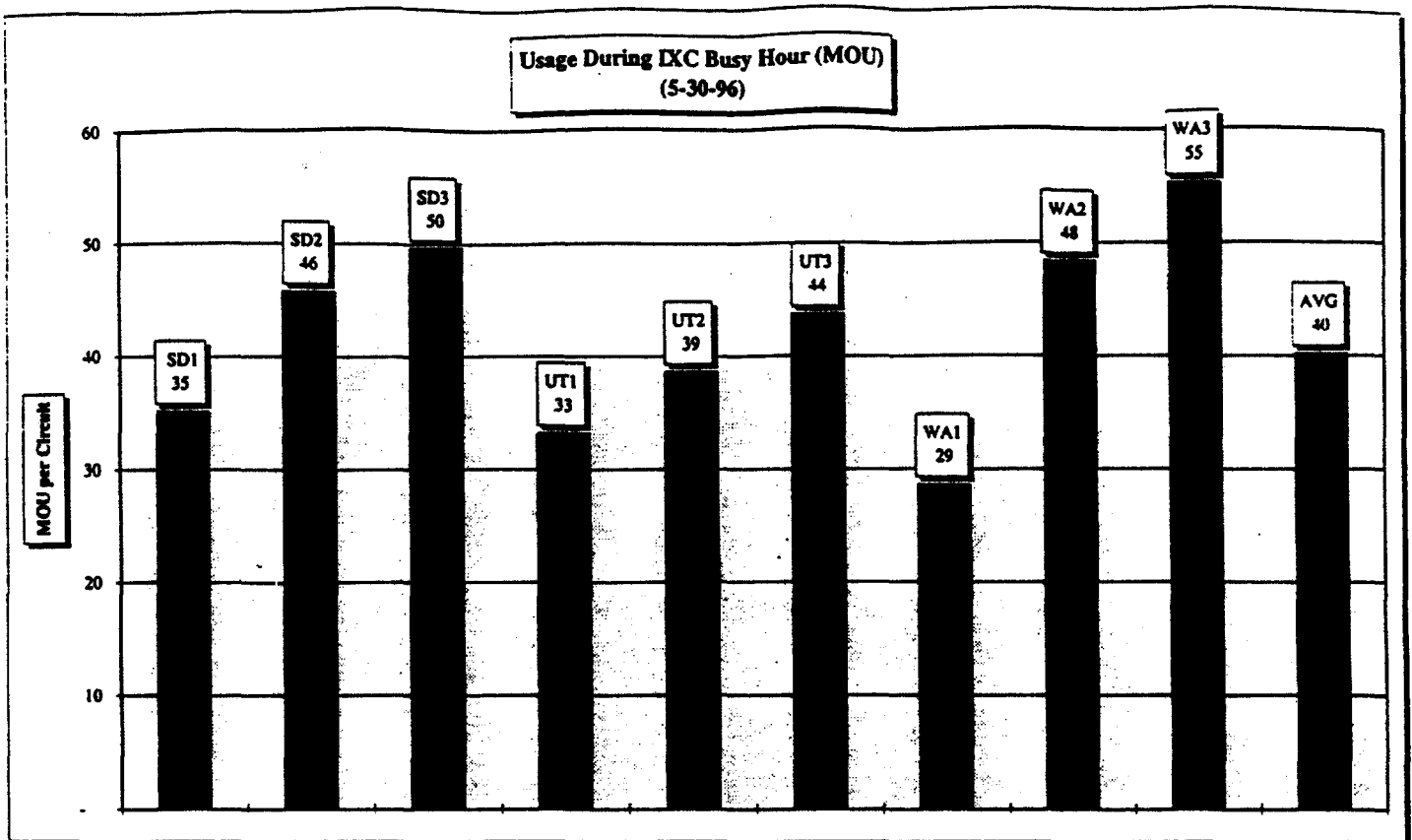
4,704 IXC Circuits

Average Holding Time

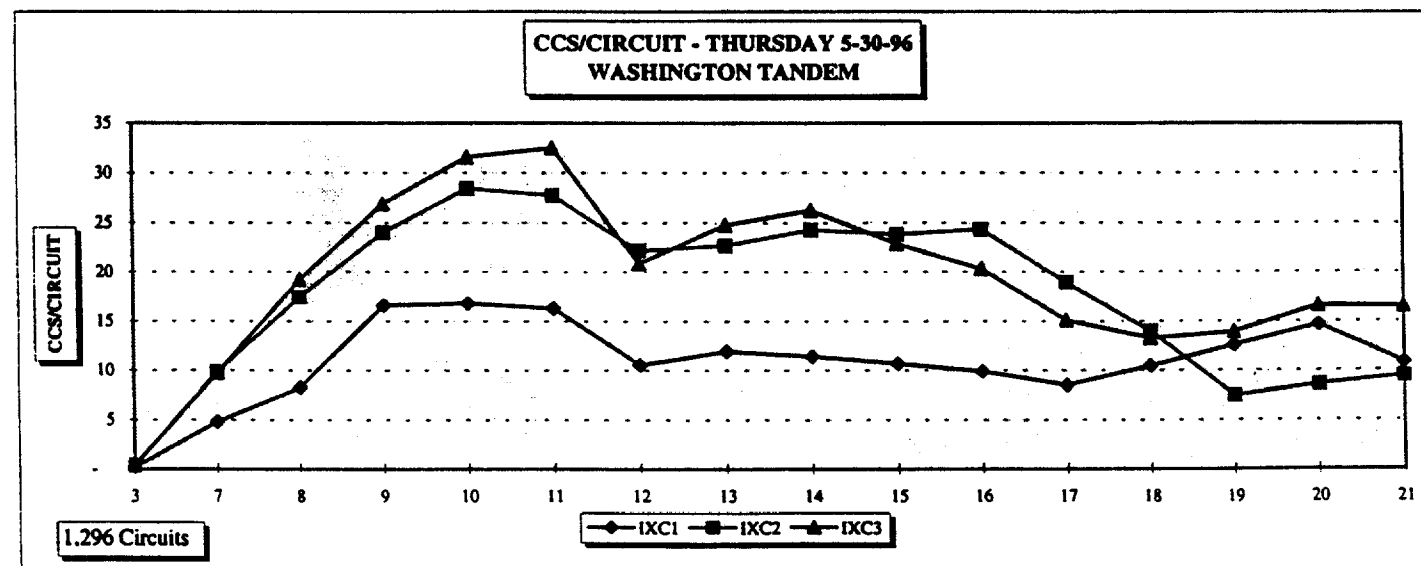
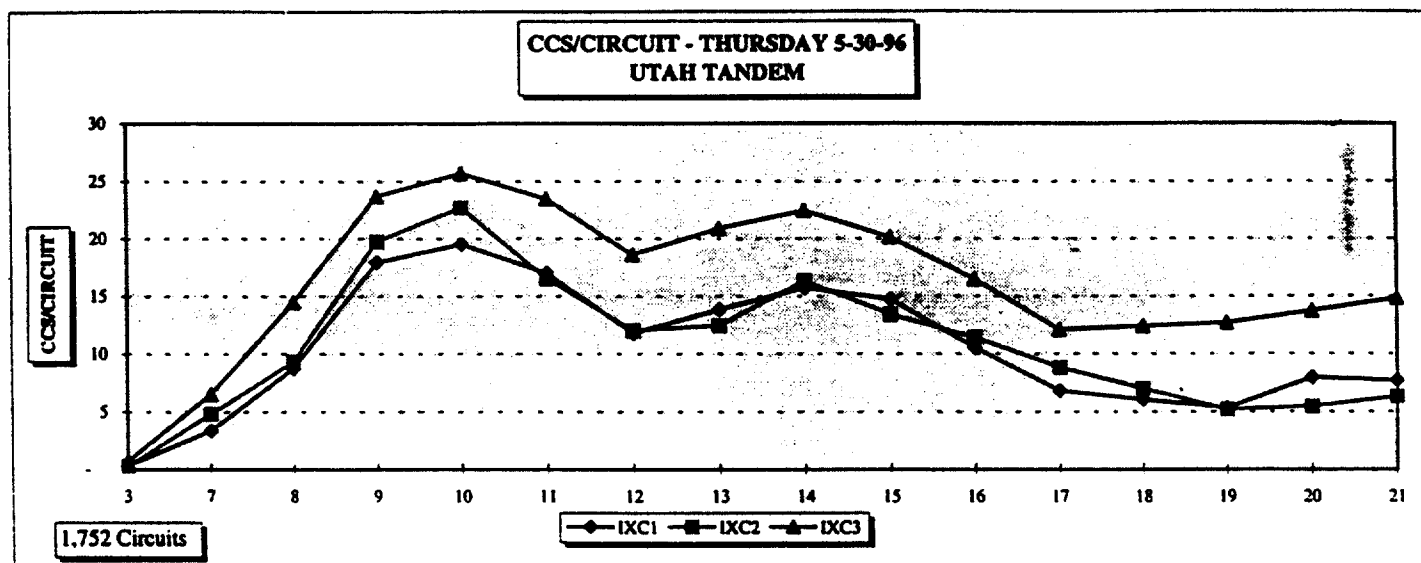
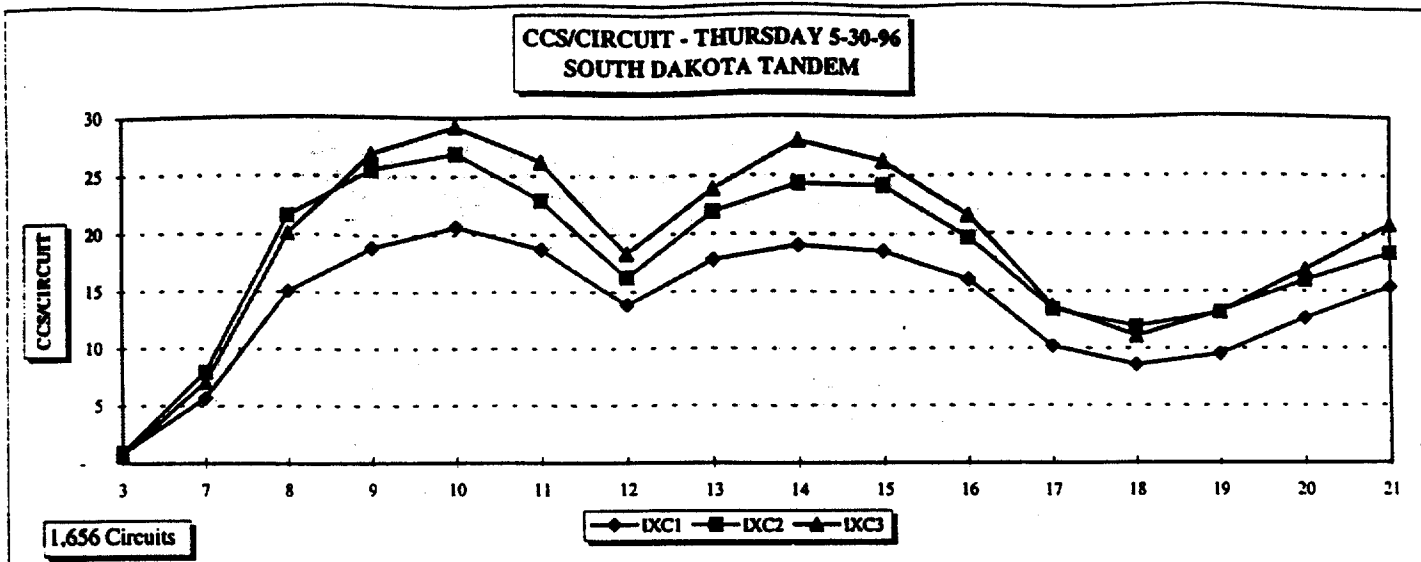


4,704 IXC Circuits

Attachment #8
ESP Network Study

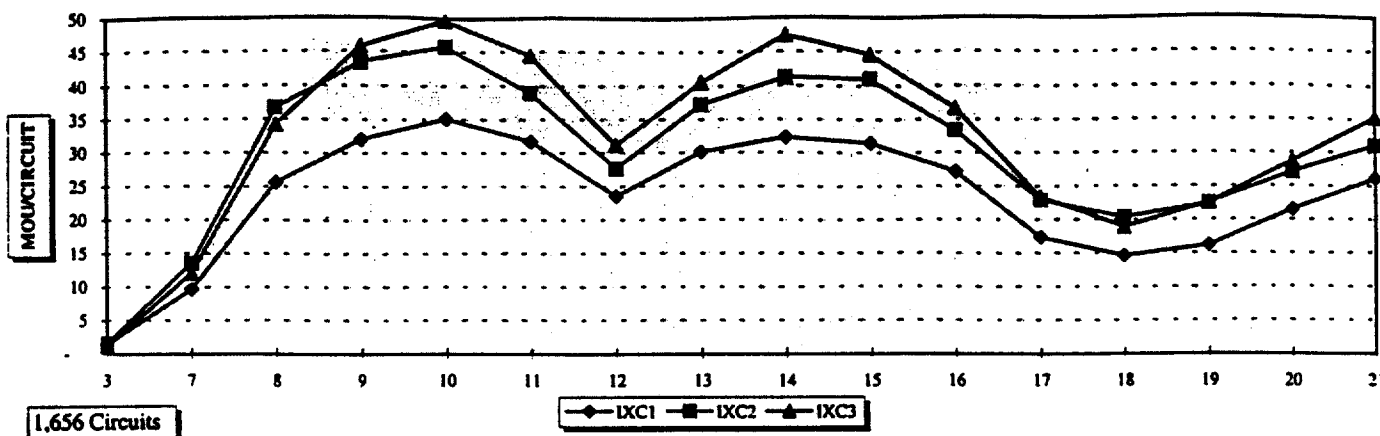


Attachment #9
ESP Network Study

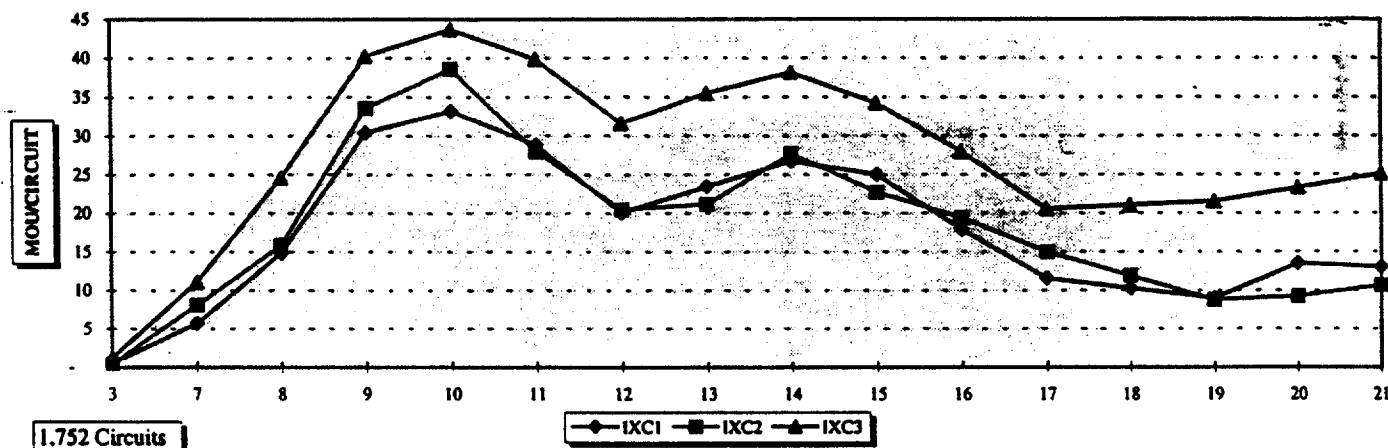


Attachment #10
ESP Network Study

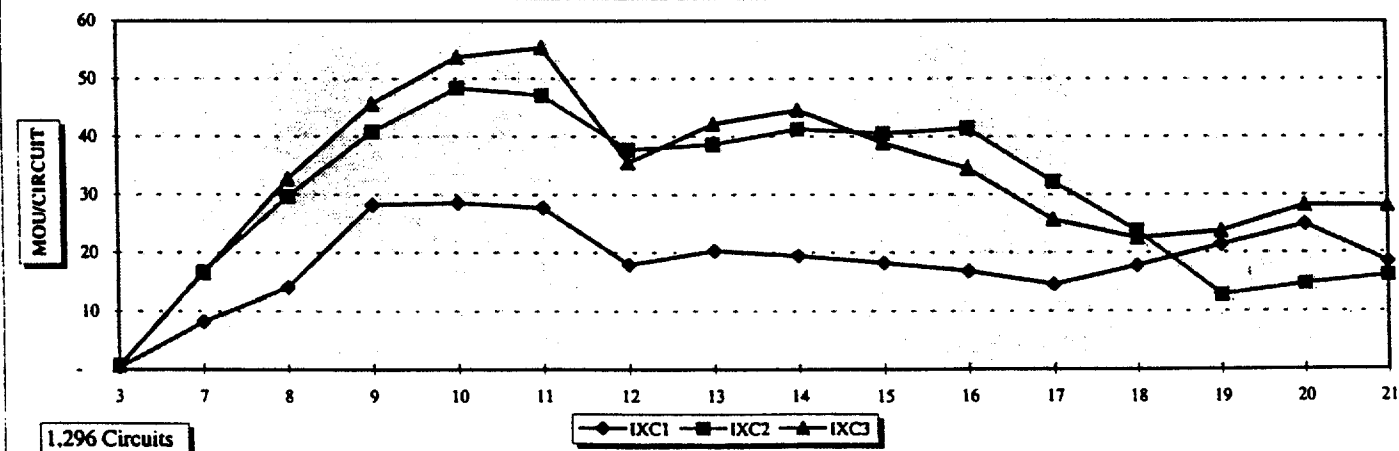
MOU/CIRCUIT - THURSDAY 5-30-96
SOUTH DAKOTA TANDEM



MOU/CIRCUIT - THURSDAY 5-30-96
UTAH TANDEM



MOU/CIRCUIT - THURSDAY 5-30-96
WASHINGTON TANDEM



Alan F. Ciamporero
Vice President

1775 Pennsylvania Avenue, N.W., Suite 900
Washington, DC 20004
(202) 333-6416

PACIFIC  TELESIS.
Group-Washington

July 2, 1996

CPB/CCB 96-16

James Schlichting
Common Carrier Bureau
Federal Communications Commission
1919 M Street, NW, Room 518
Washington, DC 20554

Dear Jim:

The ESP exemption has fostered the growth of services that has been beneficial for Californians. But, the exemption has also created inequities, such as ESPs effectively paying about 12% of what interexchange carriers pay for comparable interstate switched access services. It has also caused Pacific Bell to incur additional costs to increase network capacity as Pacific has already identified \$13.6 million in central office re-engineering costs for 1996 associated with providing business lines to ESPs. These costs are over and above the normal growth expenditures associated with comparable quantities of business lines provisioned for typical business customers. Yet, Pacific Bell receives no additional revenues from ESPs due to the ESP Exemption.

To more thoroughly document the impact of ESPs using business lines for end-user access, Pacific Bell has been studying the ESP market. A summary of initial results of our study is attached. Pacific Bell will provide additional information to the Commission as it becomes available. We are also ready to meet with you to discuss our study efforts in further detail. If you have any questions or would like to set up a meeting please call me.

Sincerely,



Pacific Bell ESP Impact Study

Introduction

To develop information on the size of the ESP market, number of business lines used for end-user access, and the impact on the network Pacific employed a "case study" approach. From study data on a sample set of ESPs, estimates of the size and scope of the ESP market within Pacific's regions were developed. The study design included the measurements of traffic continuously over a 24 hour period for 7 days a week, for a period of two weeks (May 13 - May 26, 1996). The study encompassed 29 ESPs in 29 Central Offices and over 2000 lines. Initial results are presented below.

ESP Access Network Topology

The ESP exemption has enabled the ESPs to build access networks using state tariffed business lines. This architecture requires that ESPs establish business lines within the local calling area of their end-users. For example, for an on-line service or Internet access provider to reach 80 to 90% of the end-users in California, they need to establish approximately 50 different business line hunt groups (e.g. local access nodes). Local access nodes vary in size from a few lines up to a 1000 lines in a hunt group associated with a single telephone number. The number of lines, types of service (basic business line, Direct Inward Dialing Trunks, Centrex, and ISDN PRI) vary by type of ESP and the number of end-users in a local calling area.

ESP Access Network Demographics

Pacific Bell has conducted case studies on a sample of ESPs and has developed the following estimate of the size of ESP access networks in Pacific Bell's market area:

<u>ESP Segment</u>	<u>Entities</u>	<u>Lines in use</u>
Telemessaging	200-250	17,000
On-line/VANS	10-15	50,000
Bulletin Boards	200+	3,000
Internet Access	150+	40,000
Total	560+	110,000

Based on measured call volumes from a sample of ESP lines, the average ESP line handles approximately 125,000 minutes of calls per year. ESPs pay an average of about \$20 per month per access line (including EUCL). Based on 110,000 lines, approximate annual revenues to Pacific Bell paid by ESPs for access is \$26 million. This results in an effective per minute rate for ESPs of just over \$0.002 per minute, or about 12% of what interexchange carriers pay for interstate switched access (an average of \$0.018 per minute).

The On-Line/VAN and Internet segments are growing rapidly, with orders pending for several thousand additional lines. In the past year these segments have grown by up to 20,000 lines. Annualized traffic on Pacific's network from all of the ESP segments is in excess of 13.8 billion minutes.

Impact of ESP Traffic on Pacific Bell's Network

Lines used by ESPs are priced and engineered based on average traffic levels. Average busy hour traffic levels across all lines at Pacific Bell is 3 to 5 CCS (1 CCS = one-hundred call seconds, or 1.67 minutes of talk time). Central office switches are engineered to handle, on average, the 3 to 5 CCS busy hour load for each line in an office. When busy hour loads exceed the traffic load averages on which switches and trunks are engineered, Pacific Bell has to re-engineer its switches and deploy additional office equipment and trunking. Modularized switches, such as the 5ESS, have switch groups with specific CCS capacities. We typically serve 32 lines from a single switch group in the 5E. However, when an ESP establishes a large multi-line hunt group in an office, we are unable to provision the standard 32 lines on the switch group serving the ESP. We are finding that with some ESP hunt groups we can provision only 4 or 5 lines per switch group. In addition to the impact on switch groups, intraswitch trunking between line and trunk modules must often be increased to handle above average call loads. Plus, in many cases interswitch trunking must be augmented.

Studies of ESP business line hunt groups indicate that ESP busy hours are significantly above those for business lines, with the average busy hour ranging from 13 to 21 CCS. For some individual hunt groups, we observed busy hour approaching 30 CCS. In addition, we identified one office in Silicon Valley where because of a large ESP's presence, 2.5% of the lines contributed to 20-36% of the office's traffic.

<u>ESP Segment</u>	<u>Average Peak Hour CCS</u>	<u>Peak Hour for Segment</u>	<u>Average Call Duration (Min.)</u>
Telemessaging	14	7:00PM	0.6
On Line / VANS	13	10:00PM	10.2
Bulletin Boards	21	11:00PM	28.3
Internet Access *	19	10:00PM	20.8
Average Pacific Bell (for offices sampled)	4	4:00PM	3.8

* Note: Sample size adjusted for statistical validity

In several instances business and residence customers have experienced slow dial tone and call blocking where ESPs have caused congestion in an office. To alleviate the congestion, office re-engineering jobs must be performed. In the first quarter of this year Pacific expended \$2.6M in incremental capital expense to address ESP network impacts. This requirement is from offices where ESP hunt groups were large enough to be easily identified and linked to congestion problems.

Expenses planned for the remainder of the year include another \$11 million to meet the forecasted ESP demand for ISDN Primary Rate. Thus, 1996 costs identified to date are \$13.6 million. However, we believe this estimate to be conservative in that many network augments are caused by, but not necessarily linked to, ESP traffic loads.

Kenneth Rust
Director
Federal Regulatory Matters

NYNEX

July 10, 1996

CPD / CCB 96-16

James Schlichting
Chief, Competitive Pricing Division
Federal Communications Commission
Room 518
1919 M Street, NW
Washington, DC 20554

Mr. Schlichting:

This letter is in response to several requests we have had from Common Carrier Bureau staff for information regarding potential traffic capacity problems arising from the ESP exemption. As you know, the ESP exemption was crafted some years ago to aid the fledgling information services industry, and there is increasing concern being expressed that this now robust and rapidly growing market segment will pose a severe capacity problem for a network designed and engineered to accommodate "traditional" traffic patterns. As the data supplied on the attached pages show, calls involving information service providers (ISPs) involve higher occupancy rates and are of much longer duration than traditional traffic.

ISPs gain access to their customer base via dial-up connections purchased from local exchange companies through local service tariffs, instead of purchasing access as other carriers must do. Because of this exemption from the requirement to purchase access, which has traditionally been priced well above cost to provide a subsidy for local service, end users in most cases dial a local telephone number to reach the ISP of their choice. ISPs purchase their local dial tone lines in multi-line hunt groups, and they terminate these lines in analog modem pools. The calls received by the ISP are aggregated, "packetized," and transported using private line facilities to an Internet hub.

NYNEX data for year-end 1995 identified approximately 200 companies using this configuration in its serving area. These companies were managing a minimum of 500 separate locations and utilizing approximately 50,000 business line terminations. NYNEX's current data show that the number of businesses and lines using this configuration is *increasing about 10% per month*.

It is important to note that dial-up connections for this traffic require dedicated links through the switch and network for the duration of the call. As the data on the accompanying pages show, the traffic characteristics of the ISP calls differ significantly from traditional voice traffic, and as a result this incremental demand is already beginning to impact the quality of voice telephone service to some degree, and the rapid expansion of such traffic suggested by the explosive growth in lines portends dire consequences for network access.

NYNEX has been gathering Internet usage data on a regular basis. Attachment #1 provides a representative cross section of five Internet providers of varying size offering service from offices that are predominantly business or residential, or mixed. The data are similar across NYNEX.

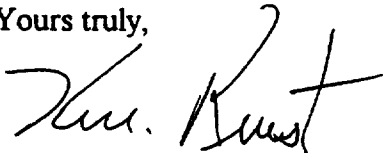
The major success factors for the ISP in this market would appear to be retail price, network accessibility by the end user, and the quality of support offered to the end user by the ISP.

The traffic usage data included on the attachments identifies the size of the ISP (# of lines), the ISP's offered price for Internet access, the volume of calls the ISP received (attempts), the number of calls that were blocked (overflow) and the length of time the call to the ISP was connected (holding time). The key factors impacting the telephone network are call volume (attempts), call duration (holding time) and CCS/line, i.e., the number of minutes the lines were in use. Occupancy, or minutes of use, is measured in hundred call seconds (CCS) or seconds of use divided by 3600 for the (1) hour period.

Our analysis of the data identifies holding times of 20 to 40 minutes for this type of traffic, compared to 5 to 10 minutes for voice traffic, and it further shows that *the holding time for the ISP traffic is correlated strongly to price structure*. It should also be noted that these data do not reflect the recent change in consumer pricing from usage sensitive to flat rate now offered by major long distance carriers. Moreover, the CCS or occupancy data indicate that this traffic is *incremental* to normal voice traffic, not complimentary. Occupancy levels in excess of 20 CCS per hour are realized in most cases by 10:00 AM, and this load is sustained throughout the day and evening and beyond midnight. Switches are engineered based upon peak loads occurring at single hours consistent with traditional office load traffic characteristics and call duration.

If you require additional information, or care to discuss the implications of these findings in more detail, please feel free to call me.

Yours truly,

A handwritten signature in dark ink, appearing to read "Kim Kuust". The signature is fluid and cursive, with a large loop at the end.

Attachments

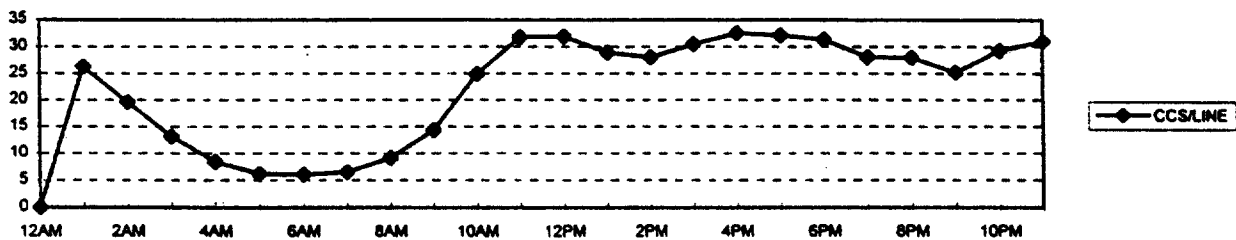
W18th St. 5ESS DS0

Data for Tuesday February 6, 1996

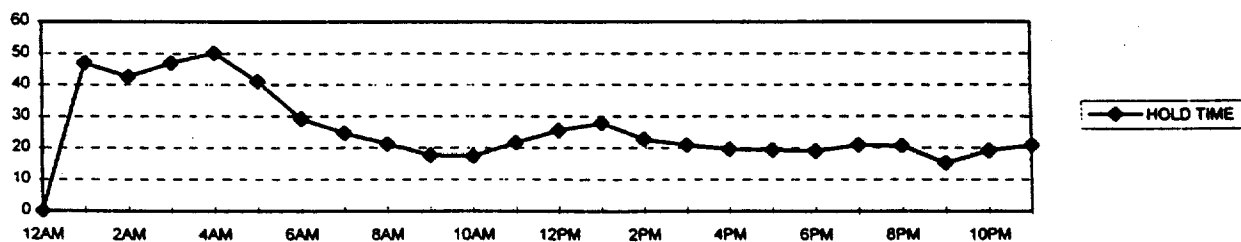
303 Line MLHG (28.8/14.4)

HOURS	CALL ATTEMPTS	OVERFLOW	USAGE	CCS/LINE	HOLD TIME (min)
12AM	n/a	n/a	n/a	n/a	n/a
1AM	282	0	7,955	26	47
2AM	232	0	5,942	20	43
3AM	142	0	4,009	13	47
4AM	85	0	2,559	8	50
5AM	76	0	1,875	6	41
6AM	105	0	1,841	6	29
7AM	134	0	1,985	7	25
8AM	218	0	2,795	9	21
9AM	411	0	4,344	14	18
10AM	723	0	7,533	25	17
11AM	739	0	8,638	32	22
12PM	629	0	9,677	32	26
1PM	525	0	8,760	29	28
2PM	622	0	8,492	28	23
3PM	735	0	9,236	30	21
4PM	836	0	9,847	32	20
5PM	839	0	9,725	32	19
6PM	835	0	9,489	31	19
7PM	679	0	8,505	28	21
8PM	685	0	8,474	28	21
9PM	836	0	7,629	25	15
10PM	773	0	8,889	29	19
11PM	748	0	9,400	31	21
\$25.00/mo 1st 60 hrs					
Total	11,889	0	158,599	23	22

CCS/LINE



HOLD TIME (min)



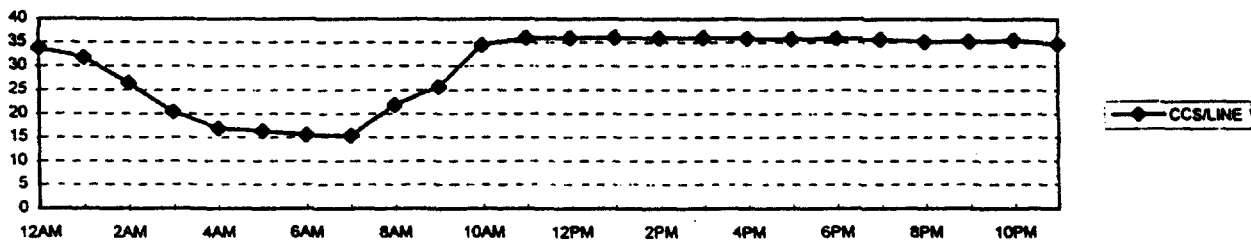
W18th St. 5ESS DS0

Data for Friday, February 16, 1996

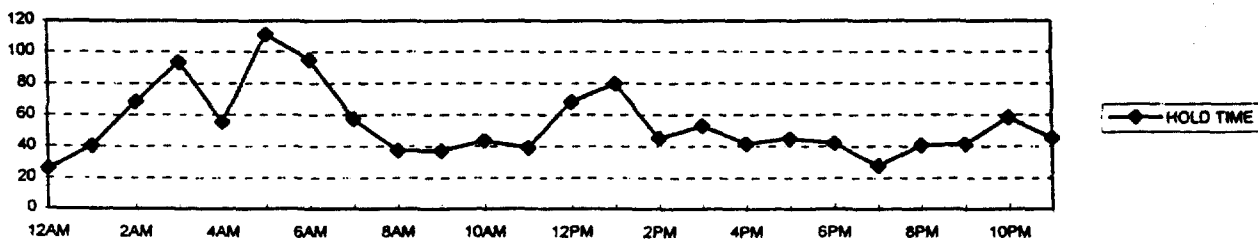
110 Line MLHG (28.8)

HOURS	CALL ATTEMPTS	OVERFLOW	USAGE	CCS/LINE	HOLD TIME (min)	
12AM	238	0	3,714	34	26	
1AM	144	0	3,493	32	40	
2AM	71	0	2,915	27	68	
3AM	40	0	2,244	20	94	
4AM	56	0	1,861	17	55	
5AM	27	0	1,802	16	111	
6AM	30	0	1,710	16	95	
7AM	49	0	1,694	15	58	
8AM	107	0	2,404	22	37	
9AM	126	0	2,834	26	37	
10AM	703	452	3,785	34	44	
11AM	1,682	1,117	3,949	36	39	
12PM	1,690	1,292	3,955	36	68	
1PM	1,708	1,273	3,958	36	80	
2PM	979	635	3,954	36	45	
3PM	1,173	805	3,958	36	53	
4PM	1,242	912	3,938	36	42	
5PM	554	341	3,930	36	45	
6PM	1,189	821	3,948	36	42	
7PM	858	517	3,919	36	28	
8PM	345	158	3,873	35	41	
9PM	347	164	3,877	35	42	
10PM	314	165	3,904	35	58	\$10.00/mo unlim hrs
11PM	215	64	3,815	35	45	
Total	13,887	8,716	79,434	30	44	

CCS/LINE



HOLD TIME (min)



Hempstead DMS-100 DS0

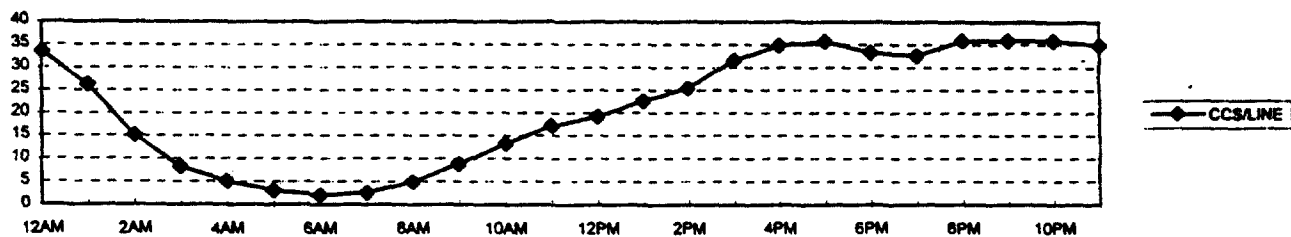
Data for Sunday March 3, 1996

632 Line MLHG

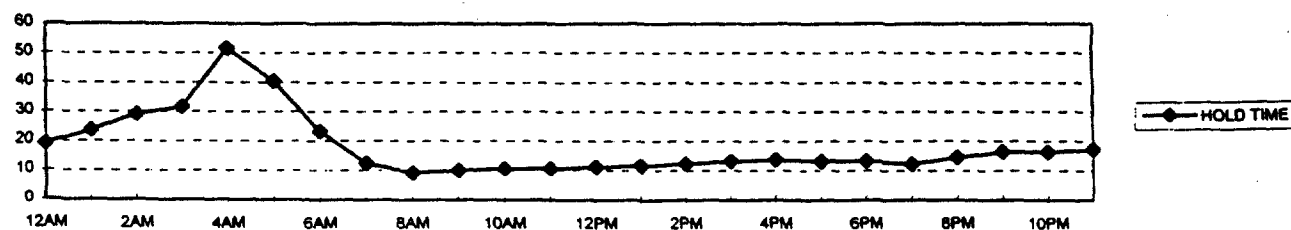
(14.4/9.6)

HOURS	CALL ATTEMPTS	OVERFLOW	USAGE	CCS/LINE	HOLD TIME (min)	
12AM	1,884	36	21,151	33	19	
1AM	1,165	0	16,590	26	24	
2AM	547	0	9,570	15	29	
3AM	274	0	5,220	8	32	
4AM	103	0	3,193	5	52	
5AM	79	0	1,918	3	40	
6AM	94	0	1,313	2	23	
7AM	219	0	1,626	3	12	
8AM	560	0	3,103	5	9	
9AM	926	0	5,574	9	10	
10AM	1,314	0	8,397	13	11	
11AM	1,699	0	10,823	17	11	
12PM	1,812	0	12,144	19	11	
1PM	2,050	0	14,325	23	12	
2PM	2,191	0	16,096	25	12	
3PM	2,534	0	19,928	32	13	
4PM	2,859	180	21,983	35	14	
5PM	3,764	915	22,561	36	13	
6PM	2,839	185	21,046	33	13	
7PM	2,902	71	20,610	33	12	
8PM	5,621	3,019	22,641	36	15	
9PM	8,210	5,909	22,701	36	16	
10PM	7,251	4,931	22,714	36	16	\$9.95/mo 1st 5 hrs
11PM	3,807	1,662	22,076	35	17	(each addit hr \$2.95)
Total	54,704	16,908	327,303	22	14	

CCS/LINE



HOLD TIME (min)



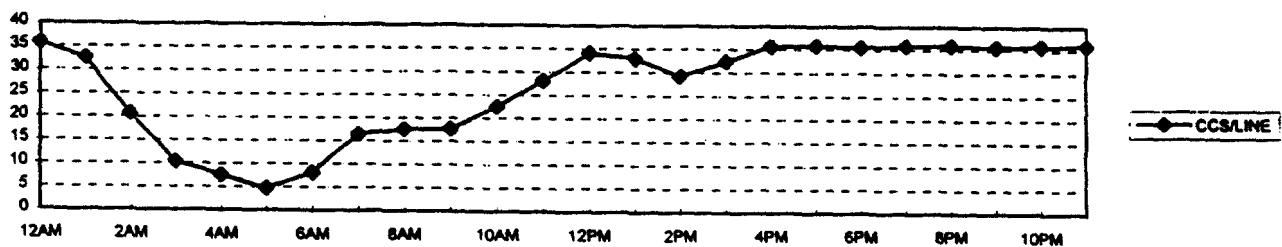
Hempstead DMS-100 DSO

Data for Thursday February 8, 1996

22 Line MLHG (28.8/14.4/9.6)

HOURS	CALL ATTEMPTS	OVERFLOW	USAGE	CCS/LINE	HOLD TIME (min)	
12AM	564	539	786	36	52	
1AM	89	63	716	33	46	
2AM	8	0	454	21	95	
3AM	7	0	229	10	55	
4AM	3	0	166	8	92	
5AM	5	0	103	5	34	
6AM	7	0	179	8	43	
7AM	27	0	363	17	22	
8AM	24	0	386	18	27	
9AM	25	0	388	18	26	
10AM	22	0	497	23	38	
11AM	112	73	618	28	45	
12PM	158	120	749	34	33	
1PM	102	74	724	33	43	
2PM	59	18	643	29	26	
3PM	87	50	712	32	32	
4PM	179	153	784	36	50	
5PM	461	432	789	36	45	
6PM	254	230	781	36	54	
7PM	896	865	789	36	42	
8PM	714	682	790	36	41	
9PM	471	442	784	36	45	\$9.95/mo 1st 5 hrs
10PM	508	472	788	36	36	(each addit hr \$2.50)
11PM	573	549	791	36	55	\$19.95/mo unlimited hrs
Total	5,355	4,762	14,009	27	39	

CCS/LINE



HOLD TIME (min)

